

CATALOGUE AND PRICE LIST OF
X-RAY SUPPLIES

X-RAY COILS

STATIC MACHINES

HIGH-FREQUENCY APPARATUS

X-RAY TUBES

X-RAY PLATES

TUBE STANDS

PROTECTING SHIELDS

X-RAY TABLES

FLUOROSCOPES

VACUUM ELECTRODES

THERAPEUTIC APPARATUS

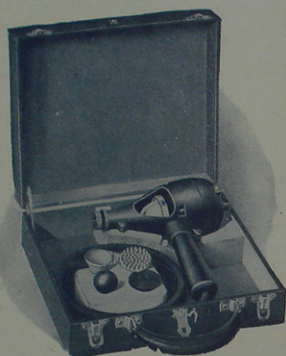
WILLIAMS, BROWN & EARLE

SCIENTIFIC INSTRUMENTS *and* SUPPLIES

918 Chestnut St.

Philadelphia, Pa.

PORTABLE ELECTRIC VIBRATORY OUTFITS FOR ELECTRIC MASSAGE.

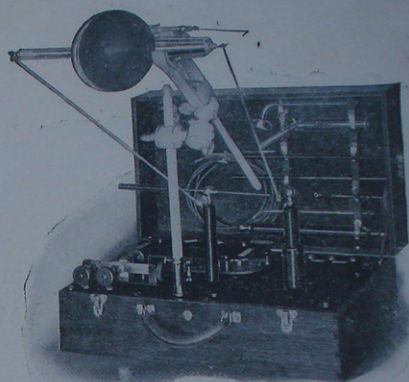


These outfits are very compact and are supplied in a handsome velvet lined case, containing instrument, applicators and cord. They can be attached to any ordinary house lighting current by screwing the plug into any lamp socket. They are specially recommended for

**Facial Massage, Muscular Development,
Nervous Disorders, Scalp Treatment,
Sleeplessness, Headache and
Rheumatic Affections.**

PRICE LIST.

No. 1 V.	Electric Vibrator with four applicators, ten feet of double insulated flexible cord and plug for attaching to lamp socket, put up in a handsome velvet lined case	Price \$45.00
No. 2 V.	Same as above, but with the addition of a rheostat to regulate the current,	Price 50.00
No. 3 V.	Same as No. 1 V. but with six applicators,	Price 47.50
No. 4 V.	Same as No. 2 V. but with six applicators,	Price 52.50
No. 5 V.	Same as No. 1 V. but with nine applicators,	Price 50.00
No. 6 V.	Same as No. 2 V. but with nine applicators,	Price 55.00



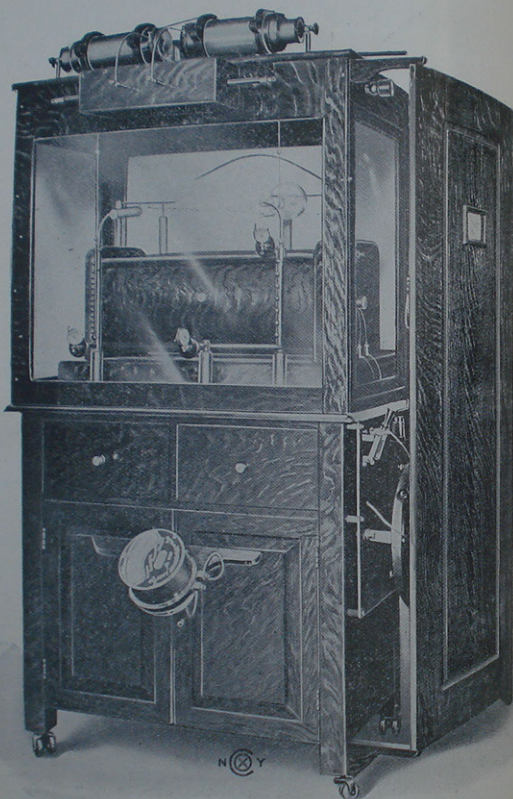
**VICTOR PORTABLE X-RAY AND HIGH
FREQUENCY OUTFIT No. 206 X.**

Does good X-ray work, delivers D'Arsonval, Oudin and Tesla currents.

For X-ray work we do not contend that a high-frequency apparatus used on the direct current can compete with a large induction coil, requiring a special installation and using from five to ten times the amount of current in taking radiographs in a few seconds. But for the average physician and hospital a high-frequency apparatus has a far wider range of usefulness, and the rays are more easily manipulated, and with less expense and trouble. What does it matter to the average physician or his patient whether it takes 5 seconds or 25 to secure a certain radiograph? With the high-frequency apparatus there is no electrolytic or mercury interrupter to bother with, and good rays can be obtained from a wide range of tubes. A high-frequency machine possesses the good features of both the static and the coil. Its field of usefulness is greater than either one. It is always ready to operate by turning a switch, and attaches to the nearest electric socket.

PRICE LIST.

No. 202X—Victor Portable Coil, Comprising Coil, Insulated Handle, Assortment of Vacuum Electrodes, Cords for connecting them, two Spring Tapes for X-Ray Tube, and Cord and Plug for connecting coil to lamp socket for the direct current, 110 to 120 volts.	\$160
204X—Victor Portable Coil and outfit as above, but adapted to the alternating current, 110 to 120 volts	\$160
206X—Victor Portable Coil and Outfit as above, but adapted to both the direct and alternating currents, 110 to 120 volts	\$185



The Golden Flame X-Ray Coil No. 210X and 211X

THE GOLDEN FLAME X-RAY COIL.

Elegant in Appearance
Effective in Operation
Easy of Manipulation

All adjustments can be made without using a screw-driver, and without disconnecting wires.

The current can be regulated entirely by the Electrolytic Interrupter, without using the Rheostat, and any change made instantly by the doctor without leaving his position at the switches, and without shutting off the tube.

The great characteristic of the coil is its high efficiency at both high and low ampere currents in the primary. Using three amperes it will give a strong current, and using 10 amperes it will give a yellow flame 12 inches long.

The Piffard Hyperstatic Transformer can be instantly put in circuit for Electro-Therapeutic Treatment. From this apparatus can be obtained the d'Arsonval High Frequency current, as well as the Piffard Transformer current. This latter being of very high voltage having the same Therapeutic Value as the Oudin Resonator is applied in the same cases, whilst the apparatus is more compact and simple.

DIRECT CURRENT OUTFITS.

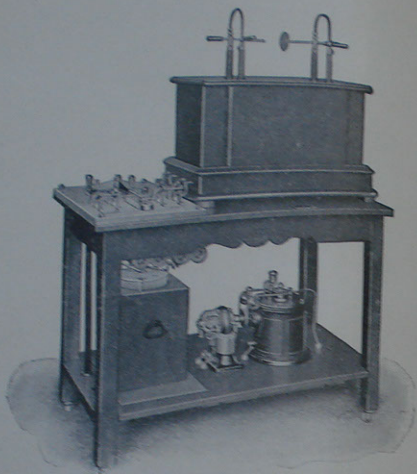
- No. 210X—The Cole Golden Flame X-Ray Coil, X-Ray Shield, Opaque to X-Rays, Cabinet, Quartered Oak and Glass, Electrolytic Interrupter, Rheostat, Multiple Spark Gaps, Ammeter, Hyperstatic Transformer, Full set Electrodes, Villard or Valve Tube, Oscilloscope, \$425
 No. 212X—Same as No. 210X, but without the X-Ray Shield \$400
 No. 214X—Same as 210X, but without the Hyperstatic Transformer and Electrodes \$375
 No. 216X—Same as 210X, but without the X-Ray Shield, Hyperstatic Transformer and Electrodes \$350

ALTERNATING CURRENT OUTFITS.

- No. 211X—Same as No. 210X, with the addition of a three-cell rectifier \$450
 No. 213X—Same as No. 212X, with the addition of three-cell rectifier \$425
 No. 215X—Same as No. 214X, with the addition of a three-cell rectifier \$400
 No. 217X—Same as No. 216X, with the addition of a three-cell rectifier \$375

USE X-OL DEVELOPER FOR X-RAY PLATES.

See Page 22.

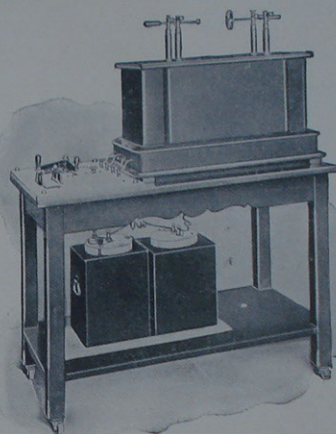


Combination X-Ray Equipment No. 252X, consisting of Co. Table with Rheostat and Switches, and Mercury Turbine and Electrolytic Interrupters.

With the Outfit here figured, the operator may use either interrupter as occasion requires. The Mercury Turbine is intended for treatment, or light radiographic work; the Electrolytic for the heaviest radiographic work. The coil is fully guaranteed against original weakness or defects in construction. The whole outfit is mounted on large casters, and is readily moved from room to room.

PRICES OF OUTFITS FOR DIRECT CURRENT.

No. 250X—10-inch Coil	\$125
Mercury Turbine Interrupter	\$25
Electrolytic Interrupter	\$25
Polished Table, Rheostat and Switches	\$55
Total cost of outfit No. 250X	\$230
No. 252X—Outfit Complete with 12-inch Coil	\$250
No. 254X—Outfit Complete with 14-inch Coil	\$280
No. 256X—Outfit Complete with 16-inch Coil	\$330
No. 258X—Outfit Complete with 18-inch Coil	\$385
No. 260X—Outfit Complete with 20-inch Coil	\$435



ALTERNATING CURRENT X-RAY EQUIPMENT.
With Electrolytic Interrupter and Rectifying Valve, both Water Cooled.

This type of apparatus is for operating on the Alternating Current Circuits of all commercial frequencies, and up to 220 volts.

PRICES OF OUTFITS FOR ALTERNATING CURRENT.

251X—10-inch Coil	\$125
Electrolytic Interrupter	\$25
Rectifying Valve	\$25
Table with Rheostat and Switches	\$55
Total cost of outfit No. 251X	\$230
No. 253X—Outfit Complete as above described, with 12-inch Coil instead of 10-inch	\$250
No. 255X—Outfit Complete as above described, with 14-inch Coil instead of 12-inch	\$280
No. 257X—Outfit Complete as above described, with 16-inch Coil instead of 14-inch	\$330
No. 259X—Outfit Complete as above described, with 18-inch Coil instead of 16-inch	\$385
No. 261X—Outfit Complete as above described, with 20-inch Coil instead of 18-inch	\$435

USE X-OL DEVELOPER FOR X-RAY PLATES.

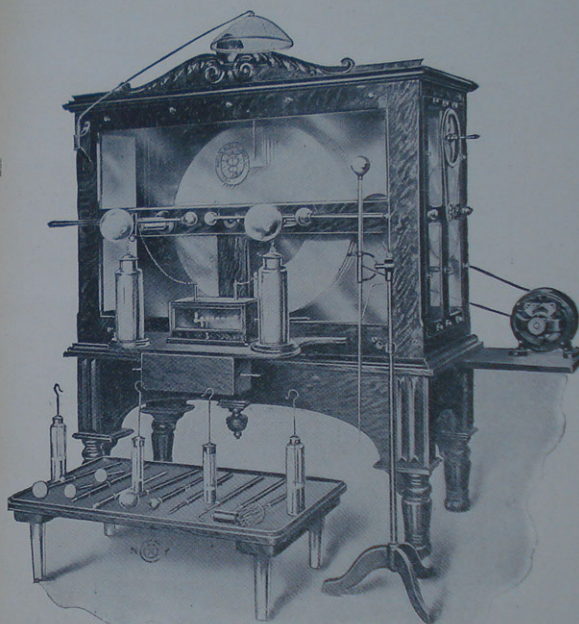
See Page 22.

Electrolytic Interrupter No. 301 X.

When a coil is operated directly from a commercial alternating current, an electrolytic interrupter is required, and the action of this is improved by a rectifying valve. The same interrupter, without the rectifying valve, is used with the direct current, giving an enormous X-ray output and quick results in radiography. The electrolytic which we show operates on a very light current, as well as on a very heavy one, giving a wide range of efficiency.

A mechanical interrupter is sometimes desirable on the direct current for treatment, or for radiography of easy subjects. There are many forms of these. The one which we handle operates by reciprocating motion between plates, produced by a small and very rapidly rotating electric motor, being thus positive in its action, and having a long life.

PRICES.



THE TWENTIETH CENTURY STATIC MACHINE.

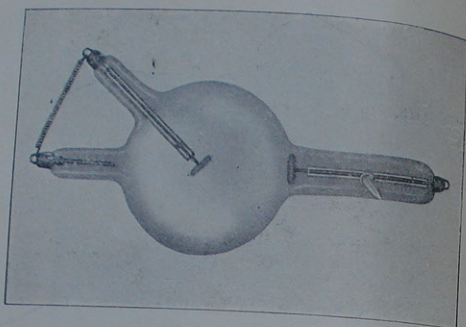
Case of Antique Oak.

The following accessories are included with the machine: Insulated Platform, Three Conductors, Three Pairs Leyden Jars, ten pounds Chloride of Calcium, seven different Electrodes, Chain Holder with Three Chains, Cords, Handles and Sponges, Crown for Static Breck, Adjustable Holder, Concentrator, Standard, Shepherd's Crook.

The prices do not include a motor. We shall be pleased to quote on these separately.

PRICES.

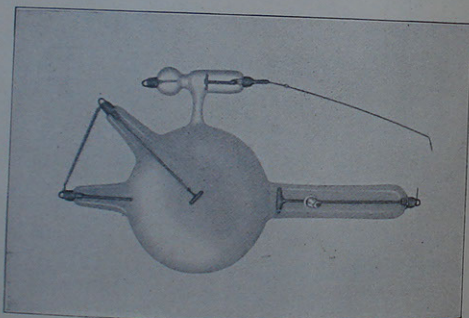
PRICES.			
No. 275X.	Eight stationary plates and eight 30-in. revolving circles,	....	\$400
No. 226X.	Ten " " " " ten " " " "	....	\$450
No. 227X.	Twelve " " " " twelve " " " "	....	\$500
No. 228X.	Fourteen " " " " fourteen " " " "	....	\$550
No. 229X.	Sixteen " " " " sixteen 32-in. " " " "	....	\$650
No. 230X.	Eighteen " " " " eighteen " " " "	....	\$700



MÜLLER X-RAY TUBE, NO. 9 M.

This is the plainest form of Müller Tube and has no attachment for regulating the vacuum. Specially adapted for Static Machines and small coils.

No. 9M—Müller 5-inch Plain Tube \$9



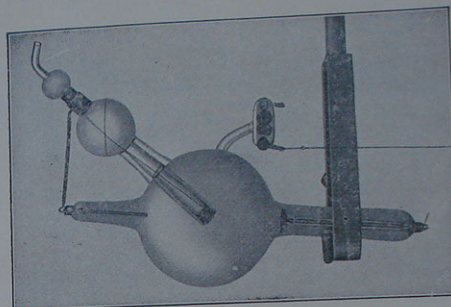
MÜLLER X-RAY TUBE, NO. 12 M.

This tube is like the above, but with the addition of a vacuum regulating device. Any desired vacuum can be approximately maintained.

No. 12M—Müller 6-inch Regulating Tube \$19

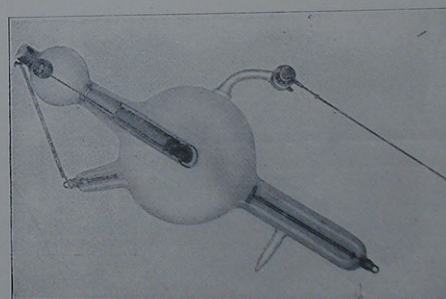
USE X-OL DEVELOPER FOR X-RAY PLATES.

See Page 22.



MULLER NO. 14 M WATER-COOLED X-RAY TUBE.

The tubes of Series 14 have a water-cooled target, a tube of water backing up the platinum, thus keeping the temperature always far below red heat. This tube has two regulators doubling the time it may be used at one application.

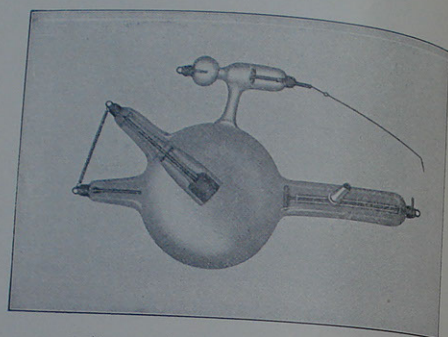


MULLER NO. 14 L WATER-COOLED X-RAY TUBE.

No. 14 L, has the target so placed that the tube may be directed upward toward the patient as well as downward without spilling the water.

PRICES OF SERIES 14 TUBES.

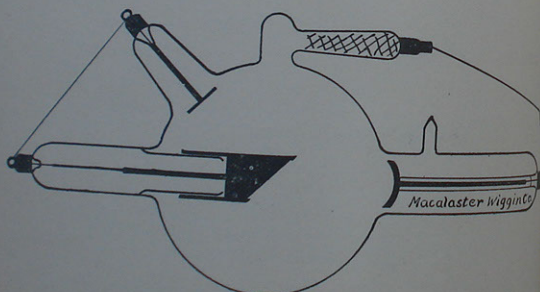
	Style M.	Style L.
Water-Cooled Tube 6 3/4-inch diameter	\$45	\$48
Water-Cooled Tube 8-inch diameter	\$55	\$58



MÜLLER X-RAY TUBE, NO. 13 A.

Tube No. 13 M has a heavy target surrounded by a metal mantle, which is designed to rapidly radiate the heat from the platinum.

Tube No. 13 A has, in addition to this a glass mantle, surrounding all, to prevent the scattering of stray cathode rays.

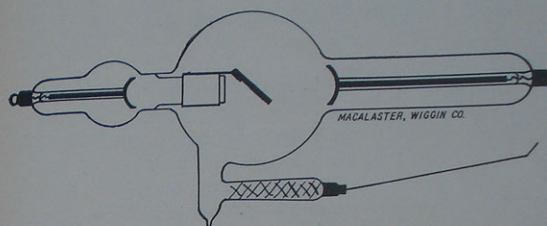


X-RAY TUBE, NO. 9 W.

This tube is furnished with a very heavy anti-cathode target, and is recommended for use on the largest coils, where quick work and deep penetration are desired.

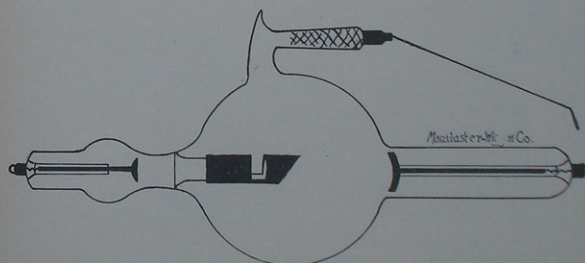
PRICES.

Müller Self-Regulating X-Ray Tube, No. 13 M.....	\$30
Müller Self-Regulating X-Ray Tube, No. 13 A.....	\$30
Heavy Anode X-Ray Tube, No. 9 W., 6 inches	\$22.50
Heavy Anode Tube, No. 13 W., (same as last but 7 inches)	\$27



HIGH-FREQUENCY X-RAY TUBE, NO. 12 W.

For X-ray work with a high-frequency apparatus a special tube is required, so constructed that it will quench the inverse current. The two tubes here figured meet this condition, showing a good



HIGH-FREQUENCY X-RAY TUBE, NO. 22 W.

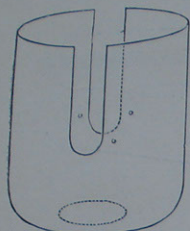
illuminated hemisphere. They are strongly built to bear transportation, and having the self-regulating device, they have long life.

PRICES.

High-Frequency X-Ray Tube, No. 12 W., 5 3/4 inches	\$14
High-Frequency X-Ray Tube, No. 22 W., 5 3/4 inches	\$18

Tubes of larger size may be had in nearly all the foregoing series. Prices on application.

LEAD-GLASS SHIELDS.



Lead Glass Protectus shield
No. 115X and No. 116X.

The cut shows the form of our Lead-Glass Protectus Shield, in which the X-Ray Tube is placed while in use, protecting not only the operator, but other parts of the patient's body from the danger of X-ray burns.

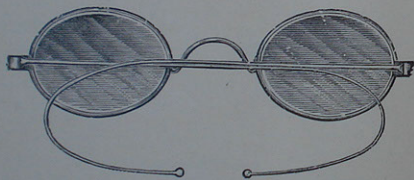
Prices on page 16.

LEAD GLASS IN SHEETS.

We furnish Lead Glass Opaque to X-Rays in Rectangular Sheets

PRICES.

18x24 centimetres	\$1.75
24x30 centimetres	\$3.00
30x48 centimetres	\$6.00



LEAD-GLASS SPECTACLES, NO. 151 X.

Large spectacles of lead-glass for protecting the eyes of the operator, \$2.75.

LEAD FOIL.

We furnish composition lead-foil made especially for protection in X-ray work. It comes in continuous sheets about 15 inches wide, and runs about 20 inches to the pound. Per pound, 25c.

USE X-OL DEVELOPER FOR X-RAY PLATES.

See Page 22.

X-RAY STANDS

—AND—

PROTECTIVE SHIELDS

For Protecting the Operator from the action of the X-Rays.

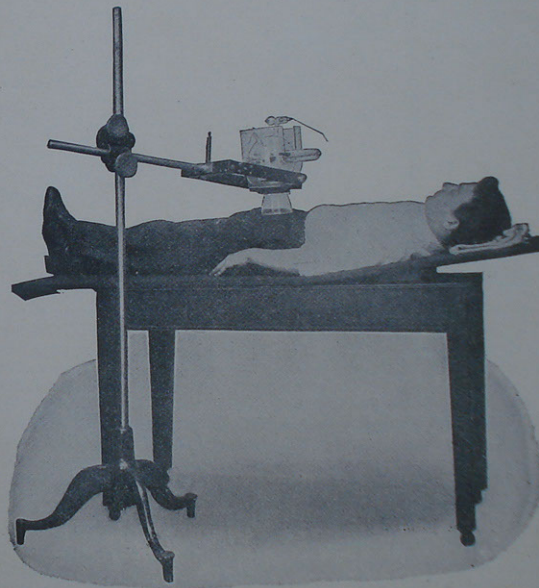


FIG. 1.

The Dangers of the X-Rays.

Many operators were at first slow to believe that the chemical activity of a ray which could not be seen, which could not be felt, should still be powerful enough to destroy living tissue, and many who refused to believe, suffered in consequence. Martyrs to the X-Ray have been many. Some are dead, others crippled for life, and still others are haunted by the memories of an experience too painful to be repeated.

The Essentials of a Good Shield.

The Essentials of a Good X-Ray shield are:—

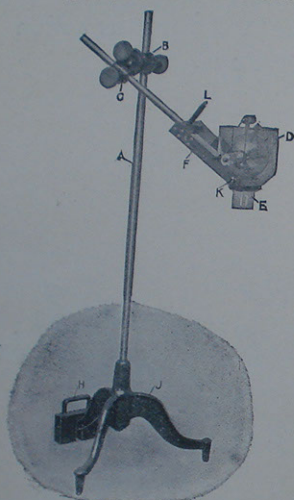


FIG. 2.

The New Protectus X-Ray Stand and Shield.

Fig. 2, illustrates our floor stand and shield. A is a stem of iron extremely rigid and accurately turned. B a heavy screw clamp for holding the head in any position on stem A. C the screw clamp for holding the horizontal rod in any position. Between B and C is a joint for allowing the tube holder to be tilted to any angle. All these adjustments are rigidly held in place by screws with heads sufficiently large to allow of easy manipulation. D is the tube shield of lead glass perfectly transparent to light but opaque to the X-Ray. E the treatment tube for confining the X-Rays to the spot to be treated. F, the wooden arms to hold shields. These are of wood to prevent any tendency to short circuiting. H is the anchor weight. It can be placed on any of the feet to insure steadiness. J, the feet which are cast in one piece and are heavy enough to secure perfect rigidity. K, nickel-plated thumbscrew allowing the tube shield to be tilted backwards or forwards, then fastened securely. The joint C allows of tilting sideways. L, Wire guide.

1. It shall protect the operator from the injurious effects of the X-Ray.
2. It shall be transparent to light so that the operator can watch his tube closely.
3. It shall be readily adjustable at the will of the operator.
4. It shall hold the tube steady in any position.
5. It shall be of such a nature as not to alarm even the most nervous patient. In other words the X-Ray shield ought to protect without suggesting to the patient that it is intended to protect from anything injurious. Our Protectus X-Ray Stand and Shields fully meet these requirements. It is with this assurance that we offer to Radiographers the stands and shields we here illustrate.

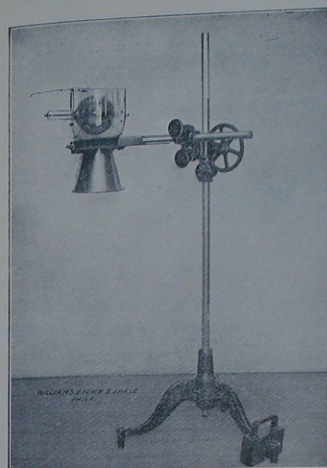


Fig. 3. Protectus X-Ray Tube Stand Nos. 107X and 108X.

Fig. 3 shows the Protectus Stand with a very substantial rack and pinion for moving the tube-arm up and down, an addition much appreciated by those who have used it.

It has also a metal compressor for pressing the part being radiographed firmly on the plate.

The Protectus Table or Bed Stand.

This Stand is intended for use on a bed or operating table, can be moved to cover any part of the patient and can instantly be adjusted for height. The body rods can be drawn in and out so as to span a patient of any size. It forms an absolutely rigid support for the X-Ray tube. Radiographers will at once appreciate the value of a stand of this kind. The saddle C, supporting the shield D, see Fig. 4 is so arranged that it can be attached to either our bed stand Fig. 4 or our upright stand, Fig. 2, and can be quickly changed from one to the other.

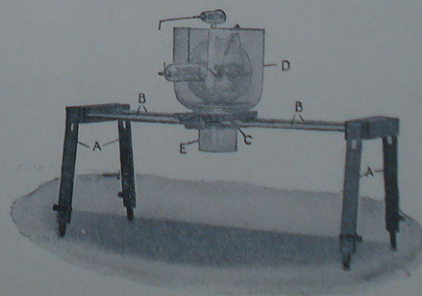


FIG. 4.

The Protectus Bed Stand.

TREATMENT TUBES.

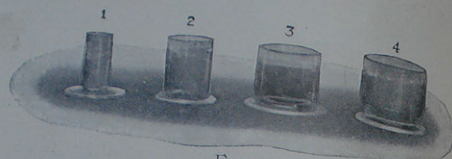


Fig. 5.

Our Treatment Tubes as shown in Fig. 5 are of Lead Glass, and fit any of our shields. They are opaque to the X-ray and by careful adjustment of the stand and selection of treatment tube the Radiographer can limit the influence of the X-Ray to any area he may desire.

PRICE LIST.

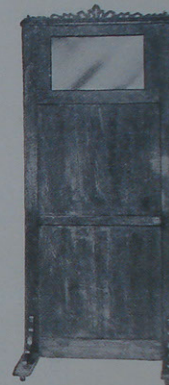
- No. 105X—The Protectus X-Ray Tube Stand, as shown in Figs. 1 and 2, with Arm for holding X-Ray Tube and Shield, including the lead-glass shield for X-Ray Tubes up to 6-in. diameter and one Treatment Tube either size, the whole extremely rigid\$42
- No. 106X—Protectus X-Ray Tube Stand, same as 105X, but with Shield for Tubes up to 8-in. in diameter\$44
- No. 107X—Protectus X-Ray Tube Stand, Fig. 3, with rack work movement, metal compressor and the attachments of 105X with Shield for X-Ray Tubes up to 6-in. diameter\$90
- No. 108X—Protectus X-Ray Tube Stand, Fig. 3, like 107X, but with Shield for Tubes up to 8-in. in diameter\$92
- No. 109X—Anchor Weight (See 1 and Fig. 2)\$2.50
- No. 110X—Protectus Table or Bed Stand without the Glass Shield, Treatment Tube or Saddle\$9.50
- No. 111X—Protectus Table or Bed Stand Complete with lead-glass Shield for Tubes up to 6-in. in diameter and any one Treatment Tube\$22.50
- No. 112X—Protectus Table or Bed Stand, same as 111X, but for X-Ray Tubes up to 8-in. in diameter\$24.50
- No. 115X—Lead Glass Shield for Tubes up to 6-in. diameter\$10
- No. 116X—Lead Glass Shield for Tubes up to 8-in. diameter\$12
- No. 120X—Treatment Tubes Fig. 5, each\$2

USE X-OL DEVELOPER FOR X-RAY PLATES.

See Page 22.

X-Ray Shelter Screen.

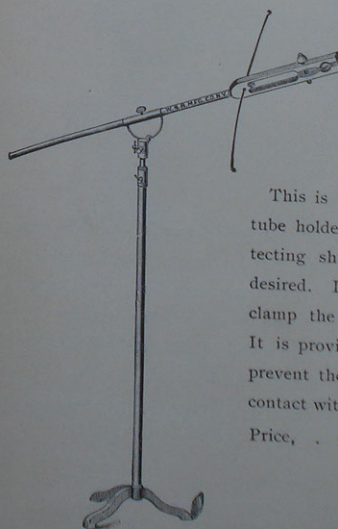
The illustration shows a floor screen on casters for the protection of the operator. It is of light wood and flexible fibre, lined throughout with lead foil, and with a window of lead glass at the top for the operator to see through.



X-Ray Screen

PRICES

- 155 X. Screen 6ft. x 3 ft. . . \$30.00
- 156 X. Screen 5ft. x 2 ft. . . 20.00



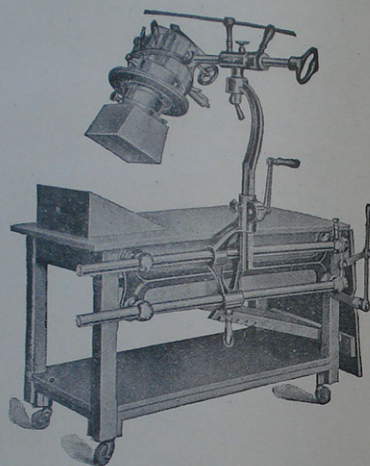
X-Ray Tube Stand

This is a convenient stand and tube holder for use where a protecting shield for the tube is not desired. It enables the operator to clamp the tube in any position. It is provided with a spreader to prevent the wires from coming in contact with the tube.

Price, \$10.00

X-Ray Tube Stand 240 X

WILLIAMS, BROWN & EARLE, PHILADELPHIA
TABLES FOR RADIOGRAPHIC WORK.



UNIVERSAL RADIOGRAPHIC TABLE, NO. 290 X.

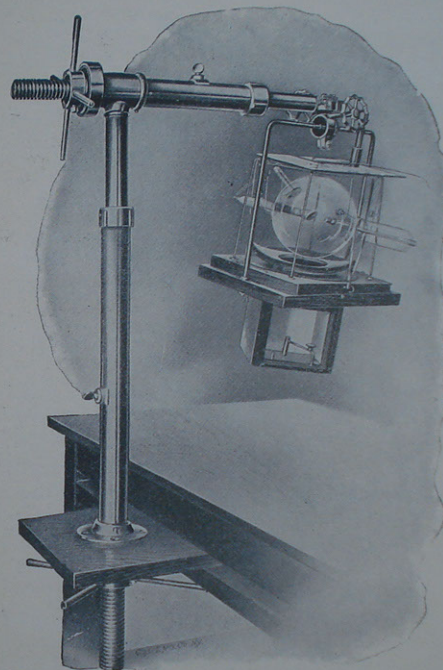
This table is very elaborately and very substantially made, to hold the tube in a lead glass shield at any angle and at any distance from the plate, to give compression or not as required to give facilities for stereoscopic work, and for many other requisites of radiography. The position of the tube is quickly and easily changed by the operator from one side of the table only.

The table is twenty-eight inches high, six feet long when extended, four feet with the leaf down.

No. 290X—Price, without Tube \$180

USE X-OL DEVELOPER FOR X-RAY PLATES.

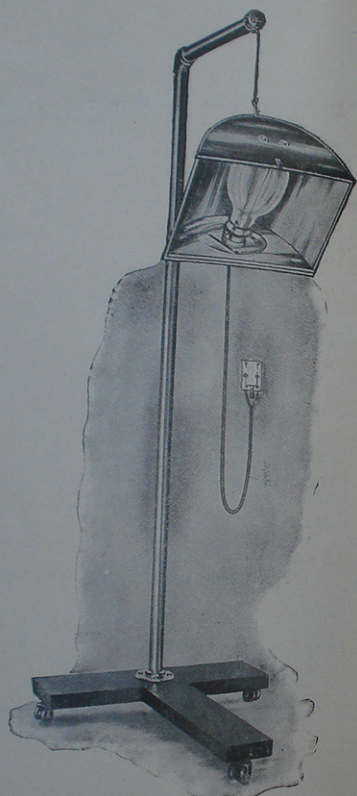
See Page 22.



TWENTIETH CENTURY RADIOGRAPHIC TABLE,
NO. 292 X.

The cut shows the supporting arm of this table. The striking features are that the tube in its lead glass shield may be slipped into position after other adjustments are made, and that by means of lead glass doors the exact position of the tube during an exposure can be marked and measured, not only assisting in locating objects, but enabling the operator to repeat the exposure exactly at a future time.

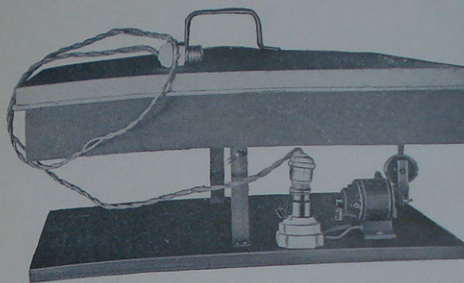
No. 292X—Price \$125



SUNBEAM MAJOR THERAPEUTIC LAMP, NO. 51 X.

This 500-candle-power lamp is the only one from which direct radiation over the entire length of the filament falls directly on the patient. All others have focus points which are exceedingly dangerous, as where such large candle power is used the heat at the focus point is so high that the patient could be easily burned in a second or two. Another advantage of this lamp is that it is on casters, so that it can be readily moved from place to place, whereas others have to be attached to the wall. This is often very inconvenient, and in many offices it would not be allowed.

No. 51X—Price of the "Sunbeam Major" Therapeutic Lamp.....\$75



**ROCKER, OR TITUBATOR, FOR DEVELOPING,
NO. 140 X.**

The developing of any photographic plate is facilitated by rocking the tray to keep the developer moving, thus hastening the work and preventing patches which are liable to appear if the developer is allowed to settle on the plate.

On account of the thickness of the film on an X-ray plate, the developing is a rather long process, and the busy practitioner does not have time to rock a tray long enough for the plate to be fully developed. The titubator above shown is rocked by an electric motor connected with a lamp socket.

A light tight lid covers the plate while being developed, so that the operator may leave the dark room and attend to other duties while the Titubator is developing the plate much more evenly than it could possibly be done by hand.

In ordering state whether the electric current is direct or alternating, and the voltage.

The price of Titubator, No. 140X, for plates up to 11x14, with motor\$25.00

The price of Titubator No. 142X for plates up to 14x17, with motor\$27.00

USE X-OL DEVELOPER FOR X-RAY PLATES.

See Page 22.

X-OL DEVELOPER.

A NEW DEVELOPER FOR X-RAY PLATES.

THE wonderful results which leading radiographers have obtained by the use of X-OL Developer have led us to take up the introduction of this new re-agent with the belief that it will prove to be of the greatest possible value to those using X-Ray machines.

Although we have had many years' experience in the developing of X-Ray plates, we have never found any developer to approach X-OL in the Intensity, Clear Whites and Fine Details which it produces. It will, in fact, show many details in a negative which are entirely lost with ordinary developers.

Many of the difficulties experienced by Radiographers come, not from the X-Ray machine, or from the tubes, but from in-different photographic work and the use of improper developers, which either fog or restrain the plate, instead of forcing up the details. Some of the popular developers are worse than useless for X-Ray work, being never intended by their manufacturers for work of this kind. We believe, therefore, that a developer especially prepared for X-Ray work will be at once received with great favor.

As supplied by the manufacturer, X-OL consists of two elements, put up as X-OL Developer and X-OL Salts. These may be compounded in any quantity, using the following proportions:

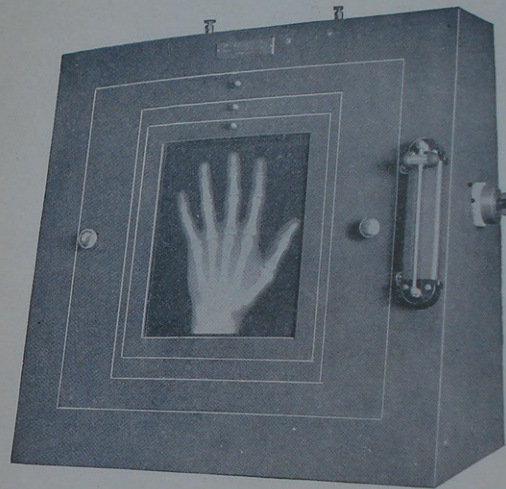
FORMULA.

X-OL Salts	2 oz.
X-OL Developer	$\frac{1}{8}$ oz.
Water	10 oz.
Bromide of Potassium (25% solution) 1 dram	

This developer may be used repeatedly until too weak or discolored. Keep temperature below 60 degrees F. when developing.

PRICES

X-OL Salts per 1-lb. bottle.....	.35
X-OL Developer, per 1-oz. bottle .....	.30



DIAGNOSTIC BOX, NO. 325 X.

The doctor can generally diagnose a case more certainly from an original X-ray negative than from any print that can be made from it. In order to see the negative to the best advantage he must look through it at an evenly illuminated surface of the proper brightness. For this purpose he needs the Diagnostic box shown above, provided with incandescent electric lamps and a dimmer for regulating the light.

PRICE.

No. 325—Diagnostic Box for Plates up to 11x14	\$20
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NEW IMPROVED OPAL SCREEN DIAGNOSTIC BOX.

arranged to take plates 14x17, and two smaller sizes, any selection desired from the following lot of kits.....\$15.00
Extra kits, any size as listed below..... 1.25

We make kits for our Improved Diagnostic Box to hold plates of the following sizes:

11 x 14"	6 1/2 x 8 1/2"
10 x 12"	5 x 7"
8 x 10"	4 x 5"



Fig. 1

The New X-Ray Fluoroscope with Metal Handle, Removable Screen and Improved Hood

XXX GRADE

There is probably no part of an X-Ray Equipment which is more important, or in fact, so far as diagnostic work is concerned, so absolutely essential, as a good Fluoroscope. Many of the fluoroscopes now on the market are in every way unsatisfactory. The amount of Platinum Salt used in their manufacture is almost microscopic and no proper means is taken to preserve what little salt is used from deterioration and discoloration.

Our XXX-Grade Fluorescent Screens are made in the latest and most improved manner. The salt is protected, as far as it is possible to do so, from deterioration, and in the quantity of Platinum Salt used, they are the richest screens now on the market. The image produced by these Screens is as sharp as a needle and intensely brilliant, and the screens are, in every way, most superior. Our Fluoroscopes are substantially made with metal handle, covered with Black Cloth, with improved close-fitting hood, and the screens are attached by self-locking hinge hooks which hold the screen firmly in position, but can be readily detached if desired. We supply these Fluoroscopes complete as shown in Fig. 1. We also supply, for use in renewals and repairs, our Fluorescent Screens on Wooden Frames as shown in Fig. 3, or the Fluorescent Screens unmounted as listed hereafter.

PRICE LIST

No. 14X—Fluoroscopes, with 4x5 Screens	\$12.50
No. 15X—Fluoroscopes, with 5x7 Screens	\$16.00
No. 16X—Fluoroscopes, with 6x8 Screens	\$20.00
No. 17X—Fluoroscopes, with 7x9 Screens	\$24.00
No. 18X—Fluoroscopes, with 8x10 Screens	\$28.00
No. 20X—Fluoroscopes, with 10x12 Screens	\$32.00

WILLIAMS, BROWN & EARLE, PHILADELPHIA

25

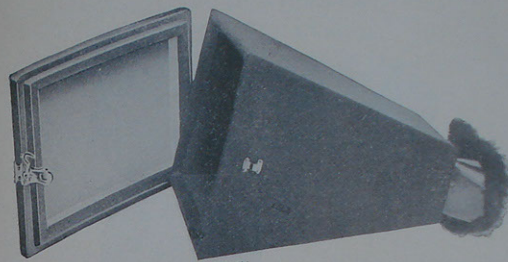


Fig. 2

The New X-Ray Fluoroscope. XXX-Grade, showing Quick Detachable Screen and Self-Locking Hinge Hooks. The strongest, most convenient and best finished Fluoroscope on the market. Note offset rabbet edge on frame which holds it rigidly in position when hooks are locked.

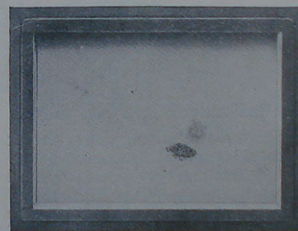


Fig. 3

PLATINUM BARIUM CYANIDE FLUORESCENT SCREENS ON WOODEN FRAMES

We supply our Platinum Barium Cyanide Fluorescent Screens, XXX-Grade, on wooden frames as shown above or unmounted, for use in making repairs and renewals in Fluoroscopes where the Screen has deteriorated.

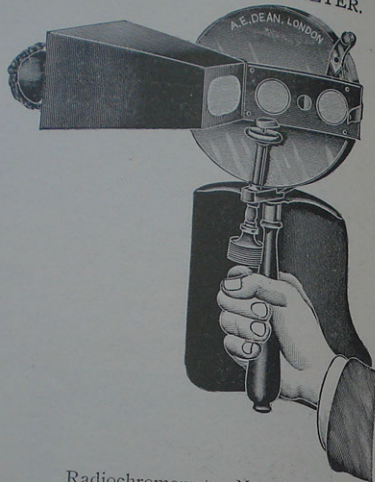
PRICES

On Platinum Barium Cyanide Fluorescent Screens, XXX-Grade, either on wooden frames or unmounted.

No. 4X—Size 4x5 inches	\$5
No. 5X—Size 5x7 inches	\$8.50
No. 6X—Size 6x8 inches	\$12
No. 7X—Size 7x9 inches	\$16
No. 8X—Size 8x10 inches	\$20
No. 10X—Size 10x12 inches	\$30

Note—Larger Screens or odd sizes can be made at any time on short notice on our own or customer's frames. Special quotations furnished.

THE RADIOCHROMOMETER.



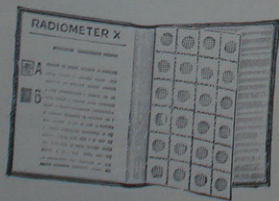
Radiochromometer No. 30 X.

This is a device for determining the penetration of the X-rays produced by any machine, or tube, or combination of machine and tube. Nine discs of aluminum of graded thickness are placed on the large disk, so that either one may be brought beside and compared with a standard for brilliancy and color. The number of that disc represents the comparative penetration of the X-rays from the source employed.

PRICE.

No. 30X Radiochromometer, for determining the penetration of X-rays \$30.00

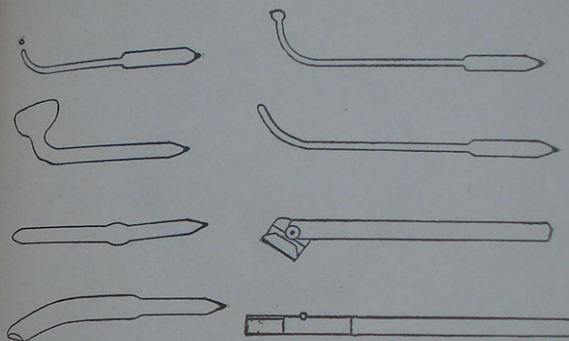
SABOURAUD'S PASTILLES, NO. 40 X.



We also supply, by an arrangement with the maker, Genuine Sabourauds Pastilles or Reagents. This apparatus gives the electrical equivalent of the degree of exposure needed to change the pastille, and therefore provides a measure which is correct and definite, and not subject to any other than electrical influences.

No. 40X Book containing 24 pastilles \$3.75

Vacuum Electrodes.

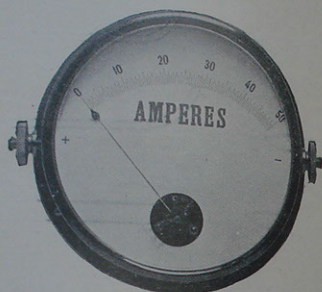


The above set is all that is required for ordinary work. Price includes rigid or adjustable angle handle as requested.

This complete set of Electrodes \$5.00.

Prices of Other or Separate Electrodes.

21 E.	U Shape	\$1.00
22 E.	Rectal	.75
23 E.	Urethral, curved	.75
24 E.	Urethral, straight	.75
10 E.	Fibre Handle	.75
12 E.	Glass Handle	.75
25 E.	Vaginal, with cupped end	.75
26 E.	General external work	.75
27 E.	Single eye	.75
29 E.	Double eye	.75
30 E.	Throat	1.00
31 E.	Hammer	.75
32 E.	Nasal	.75



DIRECT-CURRENT AMMETER, NO. 180 A.

Every coil should be equipped with an ammeter for determining how much current from the line is being used. The instruments here listed are so constructed that they may be kept in circuit all the time, and the operator is thus kept constantly informed of what he is consuming. They are made for direct current, and also for both direct and alternating.

PRICES.

No. 160A—Direct Current Ammeter, 3-in. dial, lacquered brass, capacity 50 amperes	\$14.00
No. 180A—Direct Current Ammeter, 6-in. dial, lacquered brass, capacity 50 amperes	\$24.00
No. 225A—Direct Current Ammeter, 6-in. dial, black iron, white metal finish, capacity 50 amperes	\$32.00
No. 236A—Direct and Alternating Current Ammeter, 6-in. dial, black iron, bronze finish, capacity 35 amperes	\$40.00

USE X-OL DEVELOPER FOR X-RAY PLATES.

See Page 22.

MILLIAMMETERS.



MILLIAMMETER, NO. 94 A.

The Milliammeter is connected in the secondary current in series with the X-ray Tube, and is important not only to indicate when the dose is properly proportioned to the case under treatment, but also to enable the operator to keep the current within the capacity of his tube.

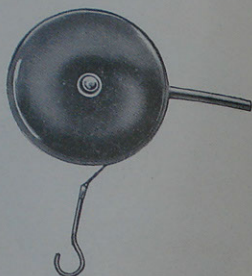
The instrument is direct-reading, and may be left in circuit with the X-ray tube throughout an exposure for either radiographic work or therapeutic treatment. It may be used on the secondary or tube-circuit of either a direct or alternating-current coil.

PRICES.

No. 80A—Dial 2½ inches, lacquered brass, capacity 50 milliamperes, \$12.75
No. 90A—Dial 3¼ in., lacquered brass, capacity 50 milliamperes, \$16.50
No. 92A—Dial 4 inches, lacquered brass, capacity 50 milliamperes, \$22.50
No. 94A—Dial 6 inches, lacquered brass, capacity 50 milliamperes, \$28.50

USE X-OL DEVELOPER FOR X-RAY PLATES.

See Page 22.



SPRING-TAPE TUBE CONNECTION, NO. 330X.

The tube wire here shown is in the form of a steel ribbon in a case wound by a spring. By this arrangement it is always kept from sagging, and is not likely to be in the way, the ribbon being always kept tightly stretched by the spring.

No. 330X—Price per pair \$1.15

LETTERING AND NUMBERING PLATES.

These plates are for the purpose of lettering and numbering X-ray plates by the processes of exposing and developing. Each set consists of a thin aluminum sheet about $3\frac{1}{8} \times 1\frac{1}{2}$ inches with grooves at the sides into which are slipped other aluminum plates, each bearing a figure, a letter or a name, which is indelibly photographed on the plate at the time of exposure.

No. 240X—Lettering Plate with the word "No" and room for three figures, with three sets of figures \$1.15

USE X-OL DEVELOPER FOR X-RAY PLATES.

See Page 22.

X-RAY PLATES.

We carry a large stock of Cramer's and Lumiere's X-Ray Plates of ordinary sizes, and turn them over so rapidly that they are always fresh. They are packed in boxes separate from the light proof envelopes, and unless otherwise ordered they are furnished thus separately packed, experience having shown that the plates keep better when not in the envelopes.

We cannot too strongly recommend the use of X-ray plates for X-ray work, for although an X-ray picture may be made on any photographic dry plate, a plate with the special heavy emulsion is much better, because the emulsion being transparent to X-rays, is acted on all through, no matter what its thickness.

We list and carry Cramer's and Lumiere's plates, but can furnish any other standard makes, prices being practically the same.

LIST PRICES OF X-RAY PLATES.

With number of plates in a package and number of dozens in a case.

Size.	List Price with envelopes.	List Price without envelopes.	No. of Plates in package.	No. of dozens in case.
4x5.....	.80	.65	1 doz.	30
5x7.....	1.40	1.10	1 doz.	20
5x8.....	1.55	1.25	1 doz.	20
6.2x8.2.....	2.10	1.65	1 doz.	12
7x10.....	2.65	2.10	1 doz.	10
8x10.....	3.00	2.40	1 doz.	10
10x12.....	5.25	4.30	$\frac{1}{2}$ doz.	4
11x14.....	7.25	6.00	$\frac{1}{2}$ doz.	4
14x17.....	11.25	9.00	$\frac{1}{2}$ doz.	3
16x20.....	16.40	13.25		2
18x22.....	20.40	16.50		1 $\frac{1}{2}$

Prices of larger sizes on application.

On all plates in original packages, whether with or without envelopes, we give a discount of 20 per cent. from list.

For case lots we allow a discount of 25 per cent. from list.

For broken packages in envelopes we charge the first list price. For original-package quantities of any size put into the envelopes by us, we allow a discount of 15 per cent. from first list price.

Sizes above 14x17 are furnished only in case lots, and at 25 per cent. from list.

THE SPINTHARISCOPE FOR DEMONSTRATING THE MARVELOUS RADIO-ACTIVE PROPERTIES OF RADIUM

THIS INSTRUMENT which has been recently invented by Sir W. Crookes, F. R. S. demonstrates most beautifully the wonderful physical properties of radium. A small quantity of radium is placed in front of a fluorescent screen and upon examination with a lens of high magnifying power the scintillations can be most satisfactorily observed.



The Spinthariscopes No. R. 1.

The rays or atoms which are being continuously given out by the radium are rendered visible when they strike the fluorescent screen.—The instrument is made in two forms.

R—No. 1. The Spinthariscopes slide is in the form of a microscopic slide, and is intended to be examined under the microscope, with an objective of about $1\frac{1}{2}$ inch power.

Price postpaid . . . \$7.50.

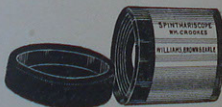
R—No. 2. The Spinthariscopes is a complete instrument for pocket use and consists of a tube about $1\frac{1}{2}$ inches long, with a fluorescent screen at one end, a movable pointer carrying the radium being placed over it, and above them a powerful lens contained in a sliding tube.

Price postpaid . . . \$9.00.

Schools and Colleges can import the above at special duty free prices.

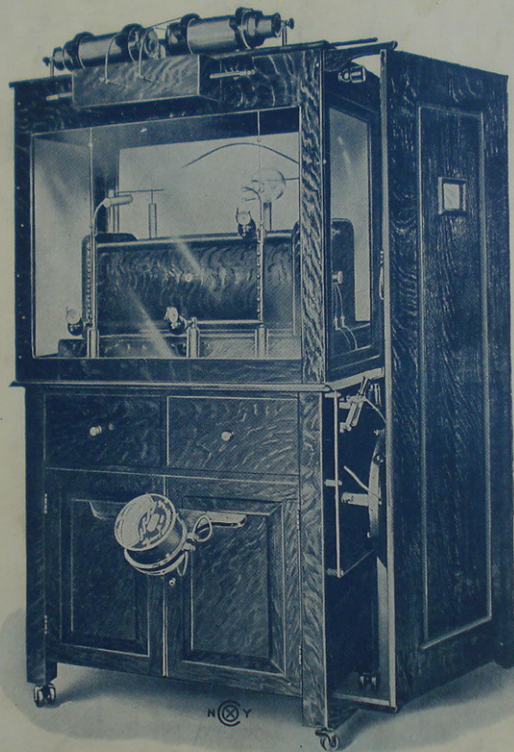
The observer must remain in a perfectly dark room from two to four minutes before attempting to use either of these instruments.

The Spinthariscopes R—No. 2. is the better instrument for all general demonstration. It shows in a most striking manner both the sparking or scintillations caused by the bombardment of the fluorescent screen by the electrons thrown off by the radium and also the wave like emanations which are constantly emitted.



The Spinthariscopes No. R. 2.

A	Alternating Current Coil, 3-5	P	Pastilles, Sabourand's, 26
B	Box for examining negatives, 23	Plates for Numbering, 30	
C	Cole X-Ray Coil, 3	Plates, Photographic X-Ray, 31	
	Combination X-Ray Equipment, 3-4	Portable Coil, 1	
D	Developing for X-Ray Plates, 22	R	
	Diagnostic Box, 23	Radio-chromometer, 26	
E	Electrodes, Vacuum, 27	Rocker for Trays, 21	
	Electrolytic Interrupter, 6	S	
F	Fluorescent Screens, 25	Screens, Fluorescent, 25	
	Fluoroscope, 24	Screens, Opaque, 17	
	Foil, Protecting, 12	Shields, Lead Glass, 12	
G	Golden Flame X-Ray Coil, 2	Spectacles, Lead Glass, 12	
H	High-Frequency X-Ray Tubes, 11	Spring Tapes for Tubes, 20	
I	Interrupters, 6	Static Electrical Machine, 7	
L	Lamp, Therapeutic, 30	Static Machine Tube, 8	
	Lead Foil, 12	Stands for X-Ray Tubes, 12, 17	
	Lead Glass, 12		
	Lead Glass Shields, 12	T	
	Lead Glass Spectacles, 12	Table Radiographic, 18, 19	
	Leaving Plates, 30	Titubator, 21	
M	Millimeters, 29	Treatment Tubes, 16	
N	Numbering Plates, 30	Therapeutic Lamp, 20	
		Tubes, X-Ray, 8-11	
		Tube Connections, 20	
		V	
		Vacuum Electrodes, 27	
		Vibrator Cover, 2	
		Victor Portable Coil, 1	
		W	
		Water-Cooled Tubes, 9	
		X	
		X (O) Developer, 22	
		X-Ray Plates, 31	
		X-Ray Tube, 1	



The Golden Flame X-Ray Coil No. 210X and 211X